



The Influence of the Farmers Knowledge Level toward the Ettawa Goat Reproduction Regulation System at Ranojaya, Indonesia

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Abstract

This research was conducted from May to June of 2016 in Ranojaya, Indonesia. There was so the purpose of this research is to find out how much influence the farmers' knowledge level toward the Ettawa goat reproduction regulation system in Ranojaya, Indonesia. In determining the location of the research, the researchers were deliberately placed in Ranojaya, Indonesia. It was by looking at the stressing of Ranojaya area. It was found that most of the community have business of Ettawa goat. The technique of determining the sample using purposive sampling technique, where the samples are deliberately selected from a population on the basis of the criteria determined by the researcher is the breeder of Ettawa goat who knows about the regulation of the reproductive system, and from the 1,193 population of 15 selected farmers as the sample/respondent. The results showed that (1) There was a significant correlation between knowledge level of farmer with reproduction system arrangement on an Ettawa goat in Ranojaya, Indonesia. (2) The correlation coefficient between variable X1 (number of livestock ownership) to variable Y is 0.75. This means that there is a strong relationship between the factor of the number of livestock owned on the knowledge level of the farmers with the regulation of reproduction system in Ettawa goat cattle. (3) The correlation coefficient between variables X2 (long breeding) to variable Y is 0.64. This means that there is a strong relationship between the old factors of breeding to the level of knowledge of farmers with the regulation of reproduction system on livestock Ettawa goat. (4) The result of program effectiveness calculation and the effectiveness of the increase of respondent knowledge about the reproduction system regulation on Ettawa crossbreed goat got the effective result, namely 72,75%. While the increase of knowledge of respondents got an effective result that is 47.5%, or there is an increase in knowledge of the respondents after having been done illumination was 14.87%.

Keywords: knowledge level of farmers, goat reproduction system, ettawa goat.

A. Introduction

The livestock sub - sector is one aspect of agricultural development that has meaning in supporting the overall economy that is directed to improve the welfare of the people, especially the increase of income for the managers and the improvement of nutrition of the beneficiaries, the situation is done through the utilization of livestock commodities, be it big cattle, And poultry.

Livestock commodities are part of several important developmental aspects and need serious attention in the face of the National Meat Self-Meat program so that this livestock commodity is one of the important aspects that need to be considered as a source of meat producer that has quality and quantity in global market competition (Saswono, 2002).

Priority in improving public welfare in the field of livestock business is a very promising potential if supported by a maintenance management system that has value efficiency and effectiveness to increase the acceleration of physical development of livestock that leads to increased income and welfare of farmers and their families.

Cultivation of livestock Ettawa goat is one commodity in Kolaka particularly in Sub Toari, because people have a lot to feel the benefits of raising Ettawa goat effort as an attempt to increase the income of farmers' income of farmers.

Toari Sub-district is one of the sub-districts located in the southern Kolaka regency that has the characteristics of the western region located on the edge of the coast and the contour of a hilly area with sufficient rainfall levels for vegetation which is one of the favorable factors in the supply Forage (HMT). This region is partly comprised of transmigration communities from Java and Bali as well as migrants from South Sulawesi with almost 70% of the population already having experience in the field of Ettawa goat breeding (according to Toari Sub-district profile data).

In addition to the above potential business Ettawa goat livestock in Toari Sub District is very promising if managed intensively, because according to data from livestock officers Toari Sub district the number of livestock out of Toari District area used as seeds as much as ± 1800 tail in 2014. This is very Potential is developed if we can change the paradigm of Ettawa goat breeders from those who are just raising livestock as a side business to be a stable business that can improve the welfare of farmers and their families. Based on the potential of existing natural resources, the breeders of Ettawa goat in Toari Sub-district have potential opportunities if the business-oriented goat breeding business of Ettawa is business-oriented, where the improvement of human resources ability must be balanced with the direction or purpose of its business. Based on the above orientation there are some obstacles that arise due to the knowledge level of livestock farmers on the regulation of the livestock reproduction system is still very less, this has an impact on the slow increase in production which ultimately also affects the low-income level of farmers.

For that the researchers want to research about the farmer's knowledge level toward the Ettawa goat reproduction system.

B. Methodology

1. *The research population*

The population of this research is the owner of an Ettawa goat in Toari Sub-district which is distributed in 10 villages. The number of goat cattle in Toari Sub-district is 5.074 heads maintained by 1,513 breeders (census data of 2015 from Livestock Head of Toari Sub-district). The population above is determined again the number of Ettawa goat in Ranojaya, Indonesia. In the research process required the existence of population data as well as the number of samples used as respondents. Population is a complete set of units or individuals whose characteristics want to know. The number of individuals who are members of the population is called population size (Anggoro, 2008).

2. *Determination Technique of Research Samples*

The sample that will be used in this research is 15 people, so that the sampling is done by a purposive sampling technique, where the sample is purposely selected from a population on the basis of the criteria determined by the researcher that is the breeder of Ettawa goat who knows about the reproductive system arrangement. Effendi (1987) says that the sample is part of a population member that provides information or data required in a research.

There are several kinds of technical sampling used in a research, but in this research used a technique of purposive sampling (Purposive sampling), that is the withdrawal of samples conducted on the basis of knowledge and consideration of the researchers. Purposive sampling

is a purposive sampling technique selected with Selected sample considerations meet scientifically responsible qualifications (Effendi, 1987).

3. Method of collecting data

Data collection using the following techniques:

a) Primary data

Primary data obtained from respondents' answers through direct interviews using structured questions that have been prepared in the form of questionnaires. The questionnaires were distributed in the form of questionnaires to farmers about the reproductive goat reproduction system of Ettawa, and the questionnaires were carried out in two stages: (a) the first stage before the pre-test, (b) the second stage after the posts. In addition to using the primary data collection questionnaire also by conducting question and answer directly with the farmers about the reproductive goat reproduction control system of Ettawa to obtain information support related to the management of the reproductive regeneration system of Ettawa goat.

b) Secondary Data

Angoro (2008) says that the technical documentation research is a way of collecting data that is done by categorization and classification of materials related to research problems, both from document sources and books, newspapers, magazines and others. Secondary data collection used documentary research in the form of Toari Sub-district profile at Toari Sub-district Office and report from the Resort Head of Toari Sub-district.

c) Research variable

Variables in this research are the object of research which is also referred to as factors that play a role in the events or symptoms studied. Characteristics of respondents who become research objects are grouped into several variables, among others:

- a. Variable X (Independent) or independent variable, consisting of:
 1. Variable X1, that is amount of livestock ownership
 2. Variable X2, that is Lama livestock
- b. Variable Y (Dependent) or non-free variable is the knowledge level of breeder about the reproduction regulation system of Ettawa goat.

In addition to examining the relationship of the variables above, also conducted an evaluation of the effectiveness of the program of extension activities and the effectiveness of increasing the knowledge of farmer about the reproduction regulation system in Ettawa Crossbreed goat.

d) Data Analysis

Data analysis is a measurement tool used to determine correlation and causal relationships between two variables (variables X and Y variables), so that statistical methods will be used to test the relationship between two variables of this research using Product moment correlation (Effendi, 1987) with formula:

$$r = \frac{N(\sum XY) - (\sum X \sum Y)}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

Information:

R = Correlation coefficient

N = Number of respondents

X1 = Number of livestock ownership

X2 = Length of breeding

Y = Knowledge level of Ettawa goat breeders

The formula of the Pearson Product Moment Method Correlation Approach is used to determine the relationship between the two variables (Variable X and Variable Y) which is expressed by the number that is moving between 0 to +1 or 0 to -1 (-1 = r = 1), if the correlation coefficient (r) approaching +1 or -1 means that there is a strong relationship, with the note that if close to -1 then the meaning of the observed variable relationship is strong and inversely proportional. Conversely, if close to zero (0) means there is a weak relationship or no relationship (Effendi, 1987).

The result of Pearson Product Moment Method Correlation statistic analysis is then compared with criticism value and significant table at 95% and 99% confidence level, it is to determine the relationship between the two variables (variable X and Y variable) whether it is very real related, real or not related real (Effendi, 1987). Anggoro (2008) stated that to know the effectiveness of the research program and the effectiveness of increasing knowledge about the influence of the knowledge level of the farmers on the regulation of reproduction system of an Ettawa Crossbreed goat and analyzing the data for the evaluation of Pre-test and post test is done with the program effectiveness formula and the effectiveness of knowledge improvement as the following:

1. The effectiveness of the extension program:

$$\frac{\text{Total of score post test} \times 100\%}{\text{Gaps}}$$

2. The effectiveness of increased knowledge

$$\frac{\text{Total of score post test} - \text{Total of score Pre-test} \times 100\%}{\text{Target}}$$

Anggoro (2008) to know the effectiveness of extension program and the effectiveness of farmer knowledge level about arrangement of marriage system on Ettawa crossbreed goat based on questioner result is as follows:

- a. Scores > 46.67 = Effective
- b. Score 33.34 - 46.67 = Effective
- c. Score < 33.34 = Less effective

Information:

- Number of questions in questionnaire = 20 questions
- Maximum score = 60 and minimum score = 20
- How to determine the score = $60 - 20 : 3 = 13,33$.

C. Result and Discussion

1. Characteristics of respondent

Based on the result of research showed that farmers were the sample of this research as breeders of Ettawa goat in Ranojaya Indonesia that as many as 15 people who have distributed questionnaires given to the respondents. Variable Y (dependent) in this research is farmer knowledge level about the reproduction, regulation system in Ettawa goat animal. Variable X1 is number of livestock ownership and variable X2 is breeding length. Distribution of respondent characteristic factors on variable X1 (number of livestock ownership) obtained from the results of filling questionnaires on 15 respondents can be seen in Table 1.

Table 1. Results Pre-test Distribution of the relationship between the number of livestock ownership with the knowledge level of the farmer about the reproductive regulatory system in the livestock Ettawa goat

Σ livestock of ownership	Respondents		The score of knowledge	
	N	%	Total	Average
Many > 29	2	13,33	80	40
Medium 18 – 28	4	26,67	158	39,5
Little <18	9	60	339	37,7

Table 1 shows that the level of respondents with the category of total livestock ownership has the highest average score of knowledge level that is 40. The results of pre-test data indicate that in the large number of goat breeding categories, the knowledge level of breeders on the reproductive regulation system in the livestock Ettawa goat Has been good, although researchers have not yet conveyed information about the technical regime of reproductive regulation on Ettawa goat.

Table 2. Post-test Outcomes Distribution The relationship between the amount of livestock ownership with the knowledge level of the breeder about the reproductive regulatory system in the livestock Ettawa goat

Σ livestock of ownership	Respondents		The score of knowledge	
	N	%	Total	Average
Many > 29	2	13,33	120	60
Medium 18 – 28	4	26,67	240	60
Little <18	9	60	513	57

Table 2 shows the level of respondents with the category of large and medium number of livestock owners having the highest average score of knowledge level (multiple score 60, and score 60). Based on this post test result, it shows that after the extension of technical material about reproductive regulation system on Ettawa goat livestock, in the category of goat farm ownership more than 18 heads, the better the knowledge level of the farmers on the reproductive regulation system in Ettawa goat cattle. This is consistent with the field observation that livestock farmers who have more than 18 heads of goat ownership pay more attention to how to make the development of livestock population increasing through the pattern of reproduction of livestock. This statement is also supported by the results of correlation coefficient analysis between the number of livestock ownership with the level of knowledge that can be seen in Table 3.

Table 3. Coefficient of correlation of cattle ownership with knowledge of breeder to reproductive regulation system in Ettawa goat

Variable X ₁	The level of knowledge	The Relationship of Variable X ₁ and Y
Σ livestock of ownership	0,75	influence

The result of the analysis shows that the value of knowledge level $r = 0.75$, meaning there is a strong relationship between the factor of ownership to the knowledge level of farmers about the reproductive regulation system on Ettawa goat livestock. This is because the correlation results show 0.75 greater than the magnitude of the criticism price in the significant table (0.482) at a significant level of 95% which means there is a real relationship between the variables of livestock ownership with the knowledge level of breeders on the reproductive regulation system on Ettawa goat livestock.

Table 4. Pre-test results of the relationship between the duration of breeding with the level of knowledge of farmers about the reproductive regulatory system in livestock Ettawa goat

Long Breeding (Year)	Respondents		The Score of Level of Knowledge	
	N	%	Total	Average
Long >11	4	26,7	153	38,25
Medium 7 – 11	5	33,3	199	39,8
New <7	6	40	29	4,8

Table 4 shows that the respondents with the old breeding category have the highest average score of knowledge level that is 39.8. The results of pre-test data indicate that in the old category of breeders are having a better level of knowledge than others although researchers have not submitted information about the technical terms of reproduction regulation on Ettawa goat cattle.

Table 5 shows that the level of respondent with the old category of breeding old has the highest average score of knowledge that is 59.5. Based on this post test result, it shows that after the extension of technical material about reproductive regulation system on Ettawa goat cattle, in the old category of goat breeding more than 11 years, the better the knowledge level of the farmers on the reproductive regulation system in Ettawa goat cattle. Based on Catur (2006) that Ettawa goat cattle was one of kinds of breed goats that good for adding income.

Table 5. Post-test result of distribution of relationship between breeding length with knowledge level of breeder about reproductive regulation system on Ettawa goat cattle.

Long Breeding (Year)	Respondents		The Score of Level Knowledge	
	N	%	Total	Average
Long >11	4	26,7	238	59,5
Medium 7 – 11	5	33,3	294	58,8
New <7	6	40	341	56,8

The fact of the field shows that in the old breeding group the longer the breeder keeps his livestock, his level of knowledge about the reproductive regulation system in the Crossbreed goat livestock Ettawa is higher than the old and medium business, this is because the breeders who have long kept the goats already have a lot of experience in rearing his livestock even though it is still traditionally derived from his parent-derived habits. While breeders who are just starting a livestock business they are still learning have no experience with the innovation of the reproductive regulatory system in Ettawa Crossbreed goat so that the knowledge level score is still low (Sriatin, 2004).

The result of correlation coefficient correlation analysis between breeding length with knowledge level can be seen in Table 6.

Table 6. Coefficiency Correlation of long-term relationship with breeder knowledge level to reproductive regulation system on Ettawa goat

Variable X ₂	Level of knowledge	The Relationship of Variable X ₂ and Y
Long of breeding	0,64	Influence

The result of the analysis shows that the value of knowledge level $r = 0.64$, meaning that the old factor influences the knowledge level of the farmers to perform the reproductive regulation system on Ettawa goat. This is because the correlation results show 0.64 greater than the magnitude of the criticism price in the significant table (0.482) at a significant level of 95% which means there is a real relationship between the old variables of breeding with the knowledge level of breeders to the reproductive regulation system on Ettawa goat livestock.

2. Program Evaluation

Evaluation is a process undertaken to determine the effectiveness of the program made and subsequently the relevance, efficiency, effectiveness and impact of the program in accordance with objectives achieved systematically and objectively, namely the level of knowledge of breeders about the reproductive regulatory system in livestock goat Ettawa positive.

From the pre-test results in appendix 3 and post-test in appendix 4 the evaluation calculation will refer to the variable element of the knowledge level of the breeder to the reproductive regulation system on Ettawa goat cattle. The results of pre-test and post-test values can be seen in Table 7.

Table 7. Pre-test and posttest results.

Variable	Score		Max. Score
	Pre-test	Post-test	
The level of knowledge	28,85	43,65	60

Table 7 above showed that the initial knowledge level of respondents (pre-test) is 28.85 and after being given counselling the knowledge level of the respondents changed to 43.65, this proves that the extension activities conducted can increase the knowledge level of breeders about the reproductive regulation system on the livestock Ettawa goat ie 14.8%, this is characterized by increasingly understanding the breeder about the reproductive regulatory system in Ettawa goat cattle.

Then to calculate the effectiveness of the extension program and the effectiveness of changes in the knowledge level are:

1) The effectiveness of the extension program:

$\frac{\text{The Score of post-test} \times 100\%}{\text{Gaps}} = 72,75\% \text{ (Effective)}$

Gaps

From the calculation can be concluded that the counselling done to obtain effective results marked by the breeders who want to find more information about the reproductive regulatory system in livestock Ettawa goat.

2) Effectiveness of Knowledge Improvement

$\frac{\text{The score of post-test} - \text{The score of Pre-test} \times 100\%}{\text{Target}} = 47,5\% \text{ (Effective)}$

Target

From the calculation can be concluded that the level of knowledge of breeders about the reproductive regulatory system in Ettawa goat livestock effective results are characterized by increasing understanding of breeders to make reproductive arrangements on cattle Ettawa goat.

D. Conclusion

Conclusion of research was the knowledge level of livestock farmers influences the regulation of the reproductive system on an Ettawa goat in Ranojaya, Indonesia, there is a strong relationship between the factor of the number of livestock ownership of the knowledge level of the farmers about the regulation of the reproductive system of Ettawa goat, there is a strong relationship between the old factors of farming to the level of knowledge of farmers about the regulation of reproductive systems on Ettawa goat livestock, and the program of extension activities and the improvement of respondents' knowledge on the regulation of the reproductive system in Ettawa goat cattle obtain effective results.

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